

WHOOPING-COUGH

Laws Requiring the Reporting, Placarding and Disinfecting, in Every Case of Disease Dangerous to the Public Health; Facts Relating to the Age of Greatest Danger, and Importance of Restricting Whooping-Cough.

DOCUMENT ISSUED BY THE MICHIGAN STATE BOARD OF HEALTH.

THIRD EDITION (10,000), MAY, 1899. 30,000 PRINTED.

[229.]

1. Whooping-Cough is a Dangerous, Contagious Disease, hence it is a "disease dangerous to the public health" under the laws in Michigan, and the observance of the following precautions is of importance.

2. Inasmuch as whooping-cough is one of the most contagious diseases and when uninfluenced by treatment runs a course of from two to three months, an average of ten weeks, and is spread by those sick with it before the "whoop" appears, therefore, in order that its restriction shall be most complete, it is important that the early symptoms be generally known. The first or catarrhal stage resembles an ordinary cold. The symptoms are a cough, usually rather severe with a tendency to become paroxysmal, sneezing, sometimes watering of the eyes, and often a slight fever. Restlessness, with a loss of appetite, and increased thirst, usually accompany these symptoms. It is often necessary to wait for the second stage, which is characterized by the "whoop" before the disease can be distinguished. When a child or young person has symptoms of whooping-cough, or a cold or cough unusually severe with a tendency to become paroxysmal, it should immediately be kept separated from all other persons, except necessary attendants, until it is ascertained whether or not it has whooping-cough, or some other communicable disease.

3. **Period of Incubation.**—The interval between the date of infection and that of the outbreak of symptoms of whooping-cough usually varies between four and twenty-one days.

4. Every person known to be sick with whooping-cough should be promptly and thoroughly isolated from the public; no more persons than are actually necessary should have charge of or visit the patient, and they should be restricted in their intercourse with other persons.

5. Plain and distinct notices should be placed upon the premises or house in which there is a person sick with whooping-cough.

6. Householders and Physicians must immediately give notice of the first case and of every case of whooping-cough to the local health officer. This is required by law.*

DUTIES OF THE LOCAL BOARD OF HEALTH.

7. Upon the receipt of notice of the occurrence of whooping-cough, the health officers and the Board of Health have duties to perform in taking measures to restrict the spread of the disease, which it is a violation of public trust for such officers to neglect or postpone. That no time may be lost, it is the duty of every board of health to make provisions for prompt action

* Section 1675 and § 1676 Howell's Statutes, as amended by Act 154, Laws of 1895. Supervisors must prosecute for all forfeitures under the law; township officers must give notice to supervisors; prosecuting attorney to conduct suit if requested—sections 8439, 8440 and 8442, Howell's statutes. Health officers of villages or cities must notify prosecuting attorney of all violations of this law,—§ 1684, Howell's statutes; the prosecuting attorney must prosecute for all such forfeitures incurred within his county,—§ 8442, Howell's statutes.

by its health officer, authorizing and directing him to be prepared at all times, as executive officer of the board, to take action without waiting for a meeting of the board, whenever a case of diphtheria, scarlet fever, measles, whooping-cough, small-pox, *or other disease dangerous to the public health* occurs within its jurisdiction. The duties of the local board of health relative to the restriction and prevention of diseases are treated of in a circular No. [120] issued by the State Board of Health.

DUTIES OF THE HEALTH OFFICER.

Some of the duties of the health officer generally required by law, may be briefly suggested as follows: Whenever he has reason to believe that there is in his jurisdiction a case of whooping-cough, he should,—

- a. Promptly investigate the subject.
- b. Order the prompt and thorough isolation of those sick or infected with whooping-cough.
- c. See that no person suffers for lack of nurses or supplies.
- d. Give public notice of infected places by placard on the premises, and otherwise if necessary.
- e. Notify teachers or superintendents of schools concerning families in which there are cases of whooping-cough.
- f. Supervise funerals of persons dead from whooping-cough.
- g. Disinfect rooms, clothing and premises, and all articles likely to be infected, before allowing them to be used by other persons than those in isolation.
- h. Keep the president of his board of health and the secretary of the State Board of Health constantly informed respecting every outbreak of whooping-cough.

In the absence of regulations made by the local board of health, conflicting therewith, orders by the health officer in the lawful performance of these duties have the force of regulations by the board of health.

Unless otherwise ordered by the local board of health, these duties are required of the health officer by Act 137, laws of 1883. Section 2 of this act, as amended by Act No. 34, approved March 28, 1889, provides that—

“Whoever shall knowingly violate the provisions of section one of this act, or the orders of the health officer made in accordance therewith, shall be deemed guilty of a misdemeanor, and upon conviction thereof he shall be punished by a fine not exceeding one hundred dollars, and the costs of prosecution, or in default of payment thereof, by imprisonment not exceeding ninety days in the county jail, in the discretion of the court.”

This penalty seems to apply to the health officer, or to whoever violates his orders. The health officer should also, in due time, give certificates of recovery and of freedom from liability to give whooping-cough, but not until after thorough disinfection following complete recovery.

THE RESTRICTION OF WHOOPING-COUGH.

8. The room in which one sick with whooping-cough is to be placed should *previously* be cleared of all needless clothing, carpets, drapery, and other materials likely to harbor the poison of the disease. This room should constantly receive a liberal supply of fresh air, without currents or drafts directly upon the patient.

9. The discharges from the throat, nose, and mouth are liable to communicate the disease, and should be received in vessels containing a strong disinfectant, or on soft rags or pieces of cloth which should immediately be burned.

10. Nurses' and attendants' hands should be washed and disinfected by chlorinated soda, their hair, (and beard if any), should receive attention, and their clothing should be disinfected, before they go in public.

11. Every person recovering from whooping-cough should be considered dangerous. The duration of infectiousness may be three weeks before the "whoop" and four or six weeks after apparent recovery; therefore such a person should not be permitted to associate with others, or to attend school, church, or any public assembly until in the judgment of a careful and intelligent health officer he can do so without endangering others; nor until after all his clothing has been thoroughly disinfected. Nor should a person from premises in which there is or has been a case of whooping-cough, attend any school, Sunday school, church, or public assembly, or be permitted by the health authorities or by the school board to do so, until after disinfection of such premises and of the clothing worn by such person, if it shall have been exposed to the contagion of the disease.

12. No public funeral should be held at a house in which there is a case of whooping-cough, nor in which a death from whooping-cough has recently occurred. No child should attend, and it would be better in most cases that few adults attend a funeral of a person dead of whooping-cough.

DISINFECTION OF ROOMS, CLOTHING, ETC.

13. After a death or recovery from whooping-cough, the room in which there has been a case, whether fatal or not, should, with all its contents, be thoroughly disinfected by exposure for several hours to strong fumes of burning sulphur, or of formaldehyde, and then it should for several hours or days be exposed to currents of fresh air.

Rooms to be disinfected must be vacated. Heavy clothing, blankets, bedding and other articles which cannot be treated with the zinc-solution, should be spread out so as to be thoroughly exposed during fumigation, which should take place in the room where the clothing, etc., have been used in connection with the patient. For a room about ten feet square, at least three pounds of sulphur or eight ounces of a forty per cent solution of formaldehyde should be used; for larger rooms, proportionately increased quantities, at the rate of three pounds of sulphur or eight ounces of forty per cent solution of formaldehyde for each 1,000 cubic feet of air space. By means of the Novy still, the formaldehyde may be distilled through the keyhole.

Close all openings to the room, place the sulphur in an iron pan supported upon bricks, set it on fire by hot coals or with the aid of a spoonful of alcohol lighted by a match, be careful not to breathe the fumes of the burning sulphur, and when certain the sulphur is burning well, leave the room, close the door, and allow the room to be closed for several hours.

Care should be taken to secure the complete burning of as much of the sulphur as is possible. To avoid danger of fire the iron pot or pan in which the sulphur is burned should be free from any leak, and it may be placed over water in a tub or pan.

Because of the law of the diffusion of gases, and the numerous crevices through which sulphur fumes may pass, such fumes of sufficient strength do not remain in a room long enough, unless the combustion of sulphur is somewhat rapid. It should not only be rapid, but should continue a considerable time. The best results are obtained by using roll brimstone broken up, or flowers of sulphur, burning the sulphur in shallow pans of sufficient number and size to rapidly fill the room with the fumes, and in quantities sufficient to last for several hours.

Cotton, linen, flannels, blankets, etc., should be treated with the boiling-hot zinc-solution, introducing them piece by piece, securing thorough wetting and boiling for at least half an hour. Heavy woolen clothing, silks, furs, stuffed bed covers, beds and other articles which cannot be treated with the zinc-solution, should be hung in the room during fumigation, pockets being turned inside out and the whole garment being thoroughly exposed. Afterward they should be hung in the open air, beaten and shaken. Carpets are best fumigated on the floor, but should afterward be removed to the open air and thoroughly beaten. In no case should the thorough disinfection of clothing, bedding, etc., be omitted.

14. Hospitals for persons sick with whooping-cough.—Disinfection of a room always necessitates vacating it, and sometimes makes it impossible to remain in adjoining rooms, therefore in some cases it seems essential to have hospital, tent or other temporary shelter for the inmates of infected houses, where bathing, disinfection and washing can be done while such houses are being disinfected and put in order. As a means of preventing the spread of disease, the law* authorizes the inhabitants of townships, cities, and villages to be constantly provided with hospitals for the reception of persons having any disease dangerous to the public health; and such is whooping-cough. The law† requires local boards of health, on the outbreak of any such disease, to provide such hospitals or places of reception for the sick and infected as they shall judge best for their accommodation and the safety of the inhabitants, and to cause such sick or infected persons, if their condition will admit, to be removed to such hospitals or places of reception. Said hospitals, and (in case the sick cannot be removed to the hospital without danger to life or health) the houses where the sick may remain, and all persons connected with said hospitals, or abodes of the sick constituting temporary hospitals, to be subject to the regulations of the board of health, or of a committee appointed by the board of health for that purpose.‡

HOW TO AVOID AND PREVENT WHOOPING-COUGH.

15. Avoid the special contagium of the disease. Do not let a child go near a case of whooping-cough; this is especially important to be observed by guardians of children between one and two years of age. Do not permit any person or thing, or a dog, cat or other animal to come direct from a case of whooping-cough to a child. Unless your services are needed, keep away from the disease yourself. If you do visit a case, bathe yourself and change and disinfect your clothing before you go where there is a child.

16. Do not permit a child to ride in a hack or other closed carriage in which has been a person sick with whooping-cough, except the carriage has since been thoroughly disinfected with fumes of burning sulphur, as specified in paragraph 15.

17. Do not permit a child to wear or handle clothing worn by a person during sickness or convalescence from whooping-cough.

18. Beware of any person who has a cough with a tendency to become paroxysmal; do not permit a child to kiss, or take the breath of such a person, nor to drink from the same cup, blow the same whistle, or put his pencil or pen in its mouth.

* Sections 1667, 1668, 1670, 1671, and 1674, Howell's Statutes.

† Section 1671, Howell's Statutes.

‡ By amended section 1740 of the compiled laws of 1871 (§1681 Howell's Statutes), the sections of law relative to townships (Secs. 35 42, of chapter XLVI of the Compiled Laws of 1871) are made to apply to cities and villages.

THE AGE AT WHICH MOST DEATHS FROM WHOOPING-COUGH OCCUR.

19. According to the mortality statistics of Michigan for the twenty-four years from 1870 to 1893 inclusive, a little over 95 per cent of all the deaths from whooping-cough were of children under five years of age. Only about 3.6 per cent of all the deaths in those years were of persons of ages from 5 to 10 years, and less than one per cent were of persons of ages from 10 to 20 years.

While the evidence seems to prove that to persons between the ages of ten and twenty years the risk of death from whooping-cough is slight, even that risk need not be taken if the disease be completely restricted.

In the present state of our knowledge, it seems important to restrict whooping-cough as completely as possible, and especially so that it shall not reach children in the second year of life.

IMPORTANCE OF RESTRICTING WHOOPING-COUGH.

In Glasgow the annual mortality from whooping-cough for 40 years 1855-94, was nearly fourteen (13.5) per ten thousand inhabitants, and exceeded those from any other dangerous communicable disease.

In all England and Wales in 1891, the deaths from whooping-cough (13,612), were nearly five (4.68) per ten thousand inhabitants, and exceeded those from measles (12,673), diphtheria (5,036), scarlet fever (4,959) or typhoid fever (4,875).

In Michigan, the *reported* deaths from whooping-cough are several times as many as from small-pox; for the twenty-four years, 1870-1893, they averaged 145 per year. If we assume that only three-fourths of the deaths were reported, the deaths in Michigan from whooping-cough have been about 193 per year. If the inhabitants of Michigan now number two and a quarter millions, and the mortality from whooping-cough were to equal that in England and Wales in 1891, the deaths from that disease in Michigan would equal a little over one thousand per year.

It is claimed that the high mortality in whooping-cough is due to the complications and sequelæ which are said to occur probably in one-third or one-fourth of all cases. If that is true, it would be no extravagance to presume that the mortality from whooping-cough would be still higher if all the deaths directly or indirectly due to it were completely reported, as it is a fact that when a secondary affection attacks, the primary disease is sometimes lost sight of entirely.

According to Dr. Farr's law—of increase of contagious diseases as density of population increases—the death-rate from whooping-cough, unless restrictive measures are taken, will undoubtedly rapidly increase in Michigan with the rapidly increasing population, and especially with the rapidly increasing lines of railroads and other facilities for easy, frequent, and rapid movements of the people. The present very considerable mortality from whooping-cough, and also the much greater mortality which may be expected, supply urgent reasons why the measures herein recommended should be generally and thoroughly adopted and enforced.



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The State Board of Health recommends that local boards of health procure and distribute copies of this document within their jurisdictions, when whooping-cough is near, and especially to the neighbors of families in which this disease is present.

DEATHS IN MICHIGAN, 10 YEARS, 1884-93.

CONSUMPTION.

PNEUMONIA.

DIPHTHERIA.

TYPHOID FEVER.

SCARLET FEVER.

MEASLES.

WHOOPING-COUGH.

SMALL-POX.

This diagram is accurately drawn to a scale, and the *relative importance* of each disease, as a cause of deaths in Michigan, during the years specified, is, therefore, correctly shown. It is apparent that whooping-cough caused many more deaths than did small-pox.

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